



UT8205A

Power MOSFET

N-CHANNEL ENHANCEMENT MODE

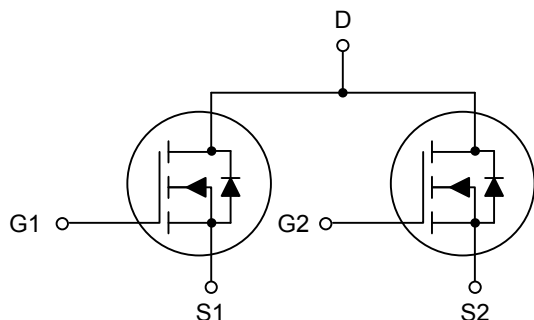
DESCRIPTION

The **UT8205A** uses advanced technology to provide fast switching, low on-resistance and cost-effectiveness. This device is suitable for all commercial-industrial surface mount applications.

FEATURES

- * $R_{DS(ON)} \leq 28m\Omega$ @ $V_{GS} = 4.5V$
- * Ultra low gate charge (typical 23 nC)
- * Low reverse transfer Capacitance (C_{RSS} = typical 150 pF)
- * Fast switching capability
- * Avalanche energy Specified
- * Improved dv/dt capability, high ruggedness

SYMBOL

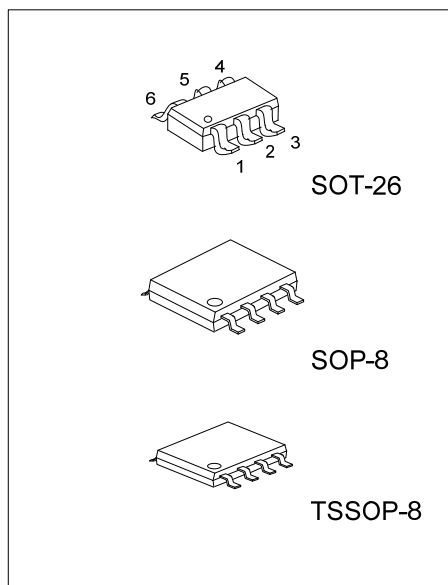
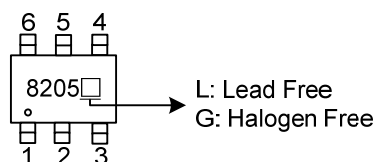


ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen-Free		1	2	3	4	5	6	7	8	
UT8205AL-AG6-R	UT8205AG-AG6-R	SOT-26	S1	D	S2	G2	D	G1	-	-	Tape Reel
UT8205AL-S08-R	UT8205AG-S08-R	SOP-8	D	S1	S1	G1	G2	S2	S2	D2	Tape Reel
UT8205AL-P08-R	UT8205AG-P08-R	TSSOP-8	D	S1	S1	G1	G2	S2	S2	D2	Tape Reel

	(1) Packing Type	(1) R: Tape Reel
	(2) Package Type	(2) AG6: SOT-26, P08:TSSOP-8 S08:SOP-8
	(3) Lead Plating	(3) G: Halogen Free, L: Lead Free

MARKING FOR SOT-26



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 12	V
Drain Current (Note 2)	Continuous	I_D	6	A
	Pulsed	I_{DM}	20	A
Power Dissipation ($T_a=25^\circ\text{C}$) (Note 3)	SOT-26	P_D	1.14	W
	SOP-8/TSSOP-8		1	W
Junction Temperature		T_J	+150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^\circ\text{C}$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Pulse Test : Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

3. Pulse width limited by $T_{J(MAX)}$

■ THERMAL DATA

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (Note)	SOT-26	θ_{JA}			110	$^\circ\text{C/W}$
	SOP-8				78	$^\circ\text{C/W}$
	TSSOP-8				125	$^\circ\text{C/W}$

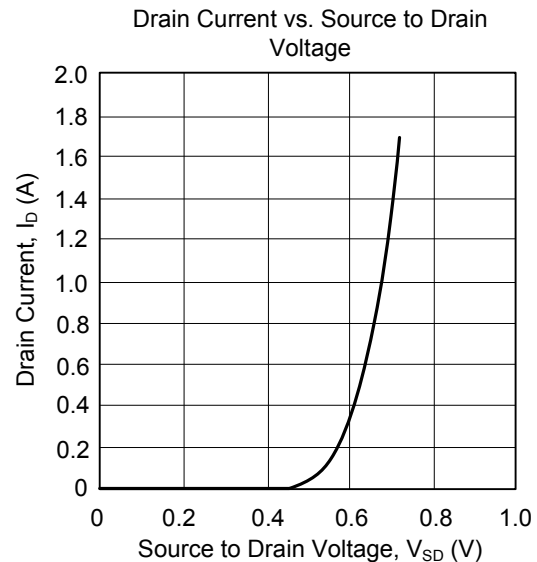
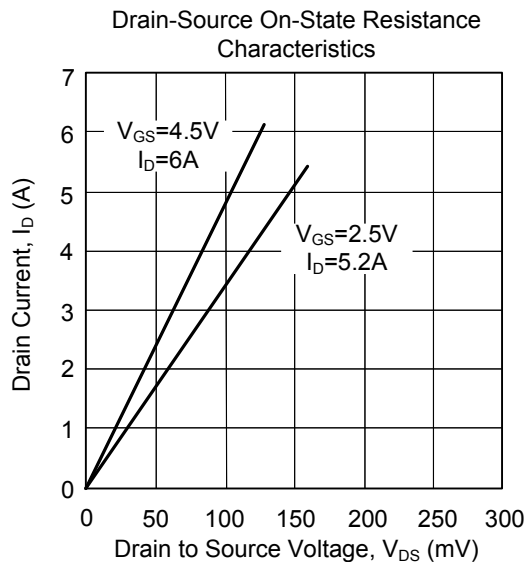
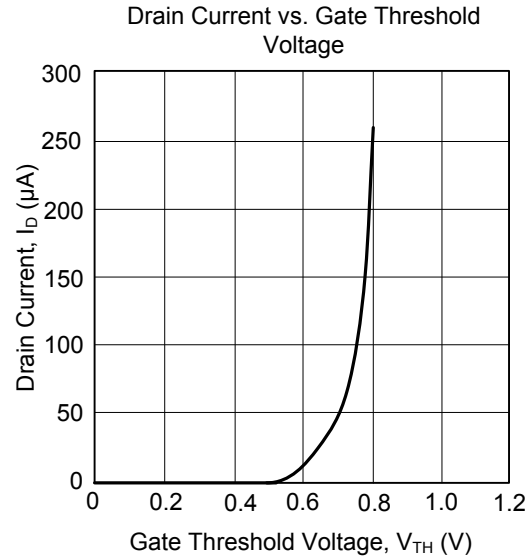
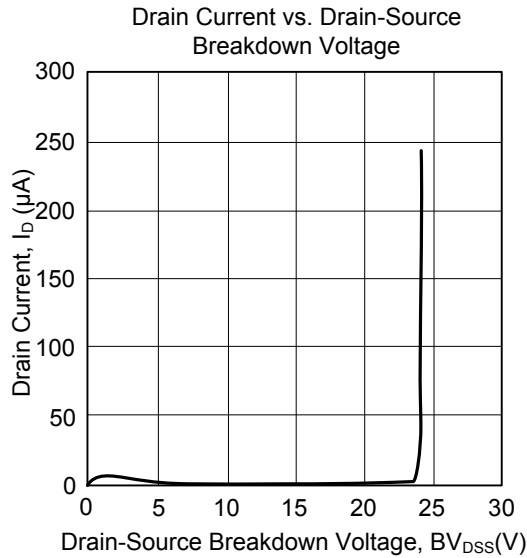
Note: Pulse Test : Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

■ ELECTRICAL CHARACTERISTICS ($T_J=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	20			V
Breakdown Voltage Temperature Coefficient	$\frac{\Delta BV_{DSS}}{\Delta T_J}$	I _D =1mA, Reference to 25°C		0.03		V/°C
Drain-Source Leakage Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V,			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±8V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	0.5		1.5	V
Drain-Source On-State Resistance (Note)	R _{DS(ON)}	V _{GS} =4.5V, I _D =6.0A			28	mΩ
		V _{GS} =2.5V, I _D =5.2A			38	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =20V, V _{GS} =0V, f=1.0MHz		1035		pF
Output Capacitance	C _{OSS}			320		pF
Reverse Transfer Capacitance	C _{RSS}			150		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time (Note)	t _{D(ON)}	V _{GS} =5V, V _{DS} =10V, R _D =10Ω, R _G =6Ω, I _D =1A		30		ns
Turn-ON Rise Time	t _R			70		ns
Turn-OFF Delay Time	t _{D(OFF)}			40		ns
Turn-OFF Fall-Time	t _F			65		ns
Total Gate Charge(Note)	Q _G	V _{DS} =20V, V _{GS} =5V, I _D =6.0A		23		nC
Gate Source Charge	Q _{GS}			4.5		nC
Gate Drain Charge	Q _{GD}			7		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note)	V _{SD}	I _S =1.7A, V _{GS} =0V			1.2	V
Diode Continuous Forward Current	I _S	V _D =V _G , V _S =1.3V			1.54	A

Note: Surface mounted on 1 in² copper pad of FR4 board; 208 $^\circ\text{C/W}$ when mounted on min.

■ TYPICAL CHARACTERISTICS



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